Lake Ontario - St Lawrence River Regulation

Issues in Plan Evaluation and Decision-Making

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Introduction

- Key Elements of the LOSLRS SVP-Based Evaluation and Decision-Making Process
- Role of the Shared Vision Model
- How this is Different from the Standard USACE Planning Process

Standard USACE Decision Framework based on

- *Maximize net economic benefits consistent with protecting the Nation's environment*

IJC not required to use P&G framework

Study Board had to devise its own decision framework

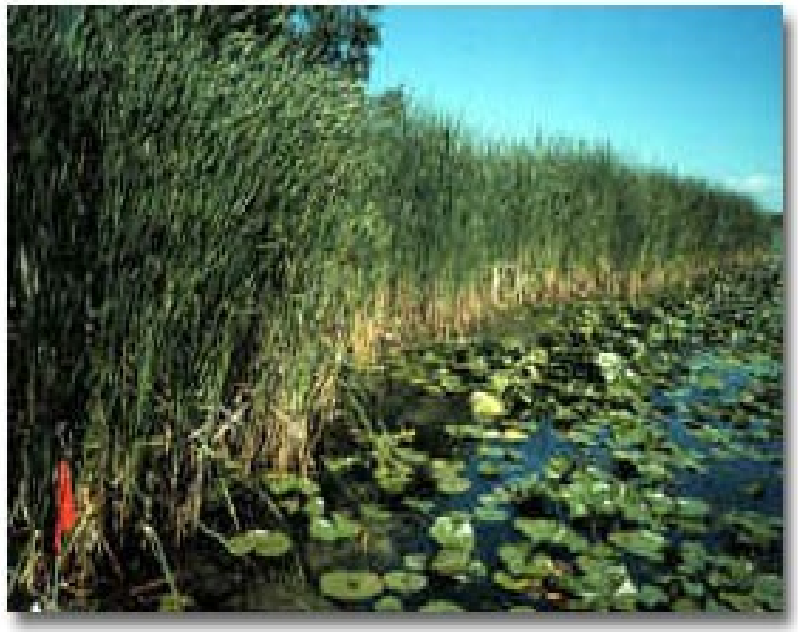
- *August 2003: The Study Board adopted "Guiding Principles" for use in its decision-making*

Seven Guiding Principles

Principle a: *Criteria and Regulation Plans will be environmentally sustainable and respect the integrity of the Lake Ontario-St. Lawrence River Syste*

Potential Concerns:

- Wetland diversity and func
- Wildfowl habitat
- Fish spawning and habitat
- Muskrat habitat



Seven Guiding Principles

Principle b: *Criteria and Regulation Plans will produce a net benefit to the Lake Ontario-St. Lawrence River System and its users and will not result in disproportionate loss to any particular interest or geographic area.*

I.e., Decision should yield net economic benefits and those benefits should be distributed fairly across geographic regions and between different stakeholder interests

Seven Guiding Principles

Principle c: *Criteria and Regulation Plans will incorporate flexible management of levels and flows in recognition of unusual or unexpected conditions affecting the Lake Ontario-St. Lawrence River System.*

I.e.,

- Test plans under extreme conditions
- Consider adaptive management

Seven Guiding Principles

Principle d: *Mitigation alternatives may be identified to limit damages when considered to be appropriate*

E.g., Consider benefits transfer to build shore protection at “hot spots”

Seven Guiding Principles

Principle e: *Regulation of the Lake Ontario-St. Lawrence River System will be adaptable to reflect the potential for changes in water supply as a result of climate change and variability.*

I.e., Consider the robustness of plans under various climate change scenarios

Lake Ontario Landlocked?!?

Seven Guiding Principles

Principle f: *Decision-making with respect to the development of the Lake Ontario-St. Lawrence River System Criteria and Plans will be transparent, involving and considering the full range of interests affected by any decisions with broad stakeholder input.*

Principle g: *Criteria and Regulation Plans will incorporate current knowledge, state-of-the-art technology and the flexibility to adapt to future advances in knowledge, science and technology.*

So, the Study Board will try to:

- Maximize Environmental Quality

  Lake Ontario wetland plant diversity, Fish habitat supply and abundance (northern pike, yellow perch, largemouth bass, smallmouth bass), Wetland bird and waterfowl abundance and diversity, Reptile and Amphibian abundance and diversity, Species at Risk, Muskrat abundance and diversity

- Maximize Economic Benefits

  Erosion damages, flooding damages, beach access, hydropower benefits, recreational boating damages/benefits, M&I damages/benefits, commercial navigation damages/benefits

- Evenly distribute costs and benefits

  United States, Canada, Upper River vs Lower River, Six Stakeholder Groups, First Nation Interests

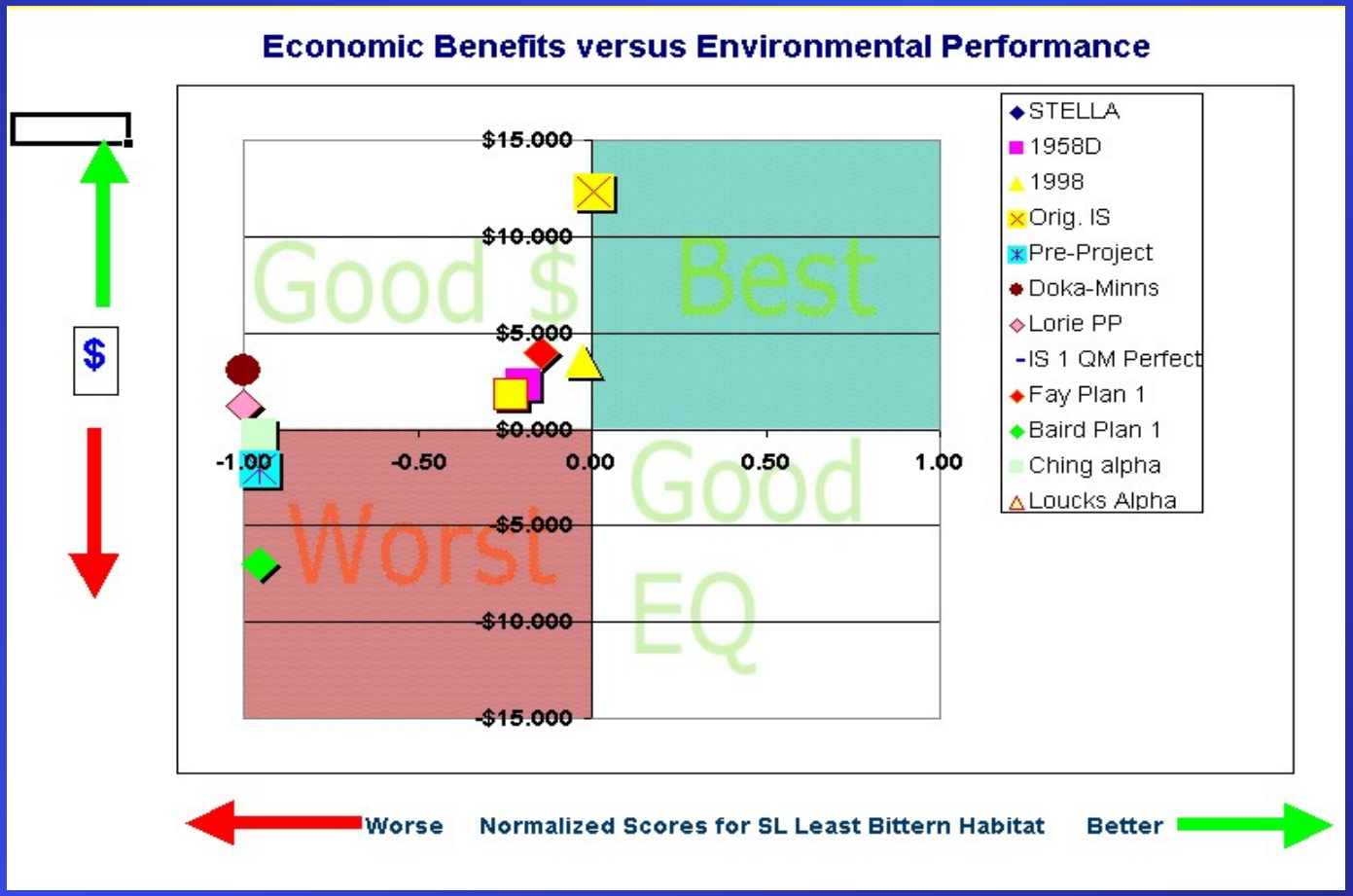
- Mitigate if possible/necessary
- Consider hydrologic conditions that have never been e
- Utilize transparent, participatory decision-making
- Use state-of-the-art methods that can be used for futu

Dozens of Performance Indicators & Mountains of Data!!!

THIS IS ABOUT 10% OF THE TOTAL RESULTS WE WILL HAVE!!

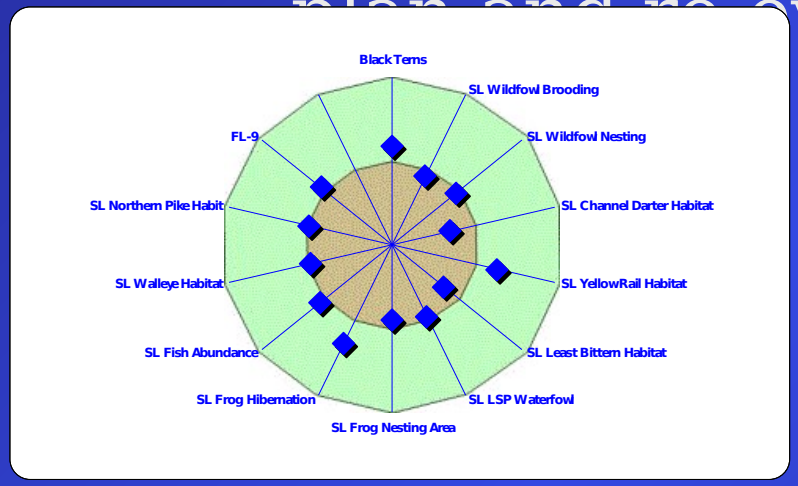
The Shared Vision Model will help by

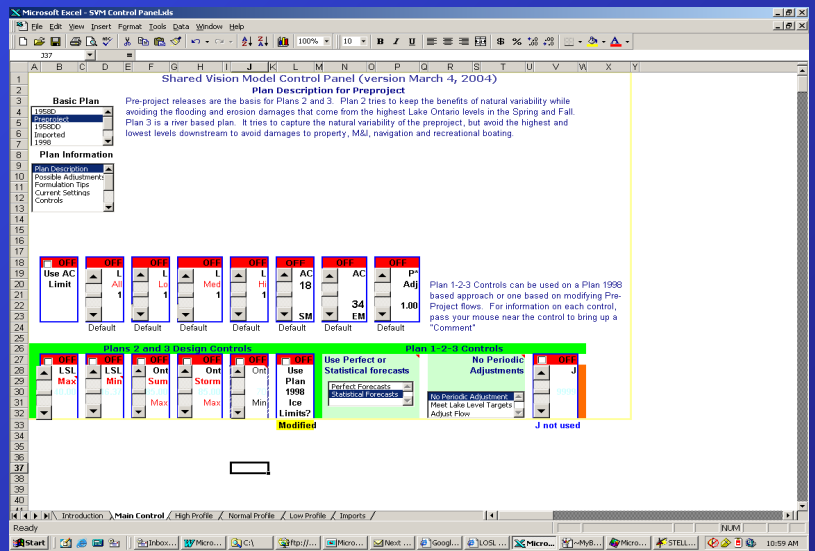
- Evaluating all PIs in one model
- Processing results to show key tradeoffs



The Shared Vision Model will help by

- Combining plan formulation and evaluation
  - Don't like the results? Tweak the plan and re-evaluate.




Shared Vision Model Control Panel (version March 4, 2004)
Basic Plan
Plan Information
Plan Description for Preproject
Pre-project releases are the basis for Plans 2 and 3. Plan 2 tries to keep the benefits of natural variability while avoiding the flooding and erosion damages that come from the highest Lake Ontario levels in the Spring and Fall. Plan 3 is a river based plan. It tries to capture the natural variability of the preproject, but avoid the highest and lowest levels downstream to avoid damages to property, M&I, navigation and recreational boating.
Plans 2 and 3 Design Controls
Plan 1-2-3 Controls
Use Perfect or Statistical forecasts
No Periodic Adjustments
Plan 1-2-3 Controls can be used on a Plan 1998 based approach or one based on modifying Pre-Project flows. For information on each control, pass your mouse near the control to bring up a "Comment"
Introduction
Main Control
High Profile
Normal Profile
Low Profile
Imports

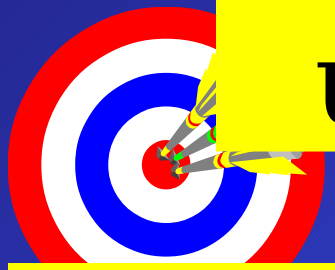
The Shared Vision Model will help by:

Allowing Study Board and stakeholders to become immersed in the data while they deliberate

- NO formulaic decisions
- NO back room voting
- NO black-box vetoes

So we have:

Similar to a standard USACE Planning Study



Objective

So, we'll march through each of these steps, provide MBs of data to the Study Board and wait for a decision, right?

A model

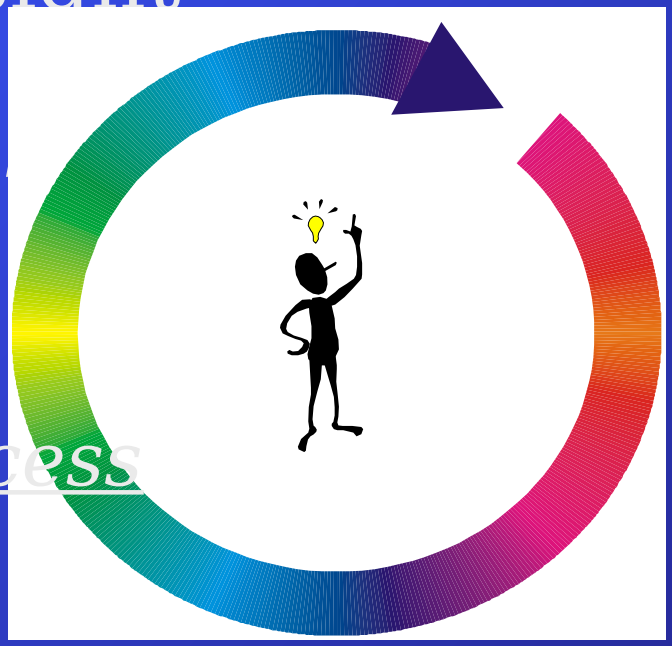
NO!

Then what's missing

Good planning requires ***iteration*** to:

- expose biases and assumptions
- foster learning and insight

➢ E.g., USACE *Planning Manual*



It has to be a non-linear process

Therefore, the Study Board practices making a decision with up-to-date information each year of the study

- Stakeholders and researchers are involved each time

The process is continually evaluated

- Assumed values are exposed and discussed
- Objectives are continually revised
- The science gets continual peer review

Everyone learns and a *Shared Vision* emerges, ri

Not quite…

Iterative decision-making leads to a complex, dynamic, and chaotic group process

- How should we change the objectives?
  - ➔Whose objectives are the right objectives?
- How should we change the research?
  - ➔Whose questions are the right questions?
- How should we balance the tradeoffs?
  - ➔Whose values are the right

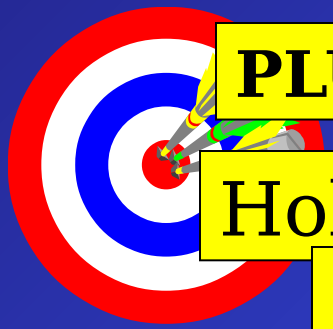
If this process is not structured carefully, it will likely fail

- Assumptions and values will remain implicit and ill-defined
- Hidden agendas will block real problem solving

So,we've hired an expert to guide the proce

- Frank Lupi, Michigan State University
- Evaluates the process to elucidate implied values and assumptions

So we have:



PLUS:

Holistic plan formulation and evaluation

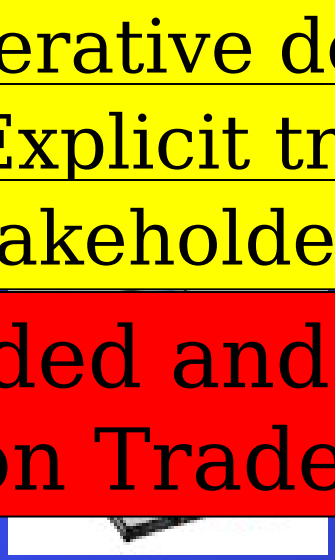
Immersion in the data and results

Iterative decision-making

Explicit tradeoff values

Broad stakeholder and public participation

All Guided and Facilitated by an Expert on Tradeoffs and Valuation



Economists

Objectives,Science, Modeling, Formulation, Evalu

Holistic plan formulation and evaluation

Immersion in the data and results

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It all leads to….

“Informed Consent”

Informed Consent is a person's agreement to allow something to happen after the person has been informed of all the alternatives and their associated risks and impacts.

- All impacts are being studied
- All stakeholders groups are involved
- All decisions will be collaborative and trans

The goals of Informed Consent decision making based on Shared Vision Planning:

- Stakeholders understand the physical realities of the system
- Stakeholders trust the research being used
- Stakeholders accept that the tradeoffs and values represented by a decision are reasonable and defensible for all affected parties

Potential Pitfalls

- "Vetoers" might not participate and can derail the process
- No potential regulation plans provide balanced benefits
- Inadequate focus on public communication

Summary

- **LOSLRS SVP utilizes familiar planning process but…**
- **Dynamically links values to research**
- **Actively engages experts, stakeholders and the public**
- **Incorporates in-process reviews by outside expert**

Decision-making process based on "Informed Consent"